<u>IN THE CLAIMS</u>

Kindly amend independent claims 1 and 12 as shown in the following claim listing:

1. (Currently amended) An optical system comprising a diffraction element (2; 102; 202; 302) formed of a substantially rigid first material having a first refractive index, the diffraction element having:

a)   a first plurality of grooves (4; 104; 226) at a first interface of the diffraction element with a second material (8; 108; 208) having a second refractive index; and

b)   a second, ~~different~~ <u>differently proportioned</u>, plurality of grooves (6; 106; 228) at a second, different, interface of the diffraction element with a third material (10; 110; 210) having a third refractive index,

wherein the first and second pluralities of grooves are aligned with respect to each other such that a combined diffractive effect is achieved,

characterised in that the third material (10; 110; 210) is a liquid.

2. (Original) An optical system according to claim 1, wherein said first plurality and said second plurality of grooves (4; 104; 226), (6; 106; 228) are blazed and arranged to select a desired diffraction order of a given input radiation.

3. (Previously presented) An optical system according to claim 1, wherein said first plurality of grooves have a first depth (d_1), said second plurality of grooves have a second, different depth

(d_2), and wherein said first and second depths are different to each other.

4. (Original) An optical system according to claim 3, wherein said grooves are arranged to fulfil the following relation:

$$-(n_1 - n_2)d_1 + (n_1 - n_3)d_2 = m\lambda_n$$

wherein, n_1, n_2 and n_3 are the first, second and third refractive indices respectively, d_1 and d_2 are the first and second depths respectively, m is a desired diffraction order and λ_n is a wavelength of the given input radiation.

5. (Original) An optical system according to claim 4, wherein the given radiation beam comprises a plurality of different wavelengths λ_n and the grooves are arranged such that a diffraction efficiency η is substantially maximised for each of said different wavelengths λ_n, the efficiency η for each of said different wavelengths λ_n of the given input different radiation beam being given using the following relation:

$$\eta = \left(\frac{\sin\left[\dfrac{\pi(-(n_1 - n_2)d_1 + (n_1 - n_3)d_2)}{m\lambda_n} - \pi \right]}{\dfrac{\pi(-(n_1 - n_2)d_1 + (n_1 - n_3)d_2)}{m\lambda_n} - \pi} \right)^2$$

6. (Previously presented) An optical system according claim 1, wherein said first plurality and said second plurality of grooves (4; 104; 226), (6; 106; 228) are arranged concentrically about an optical axis (OA).

7. (Previously presented) An optical system according to claim 1, wherein widths of said coinciding pairs are substantially the same, said widths being in a direction perpendicular the optical axis.

8. (Previously presented) An optical system according to claim 1, wherein the second material has a given optical dispersion and the third material has a different optical dispersion.

9. (Previously presented) An optical system according to claim 1, wherein said second material is a fluid.

10. (Original) An optical system according claim 9, wherein said second material is a gas (8; 108; 208).

11. (Previously presented) An optical system according to claim 1, wherein said system is arranged to modify a configuration of said third material using electrowetting forces.

12. (Currently amended) A method of manufacturing an optical system comprising a diffraction element (2; 102; 202; 302) formed of a substantially rigid first material having a first refractive index, the diffraction element, when manufactured, comprising:

a)   a first plurality of grooves (4; 104; 226) at a first interface of the diffraction element with ~~with~~ a second material (8; 108; 208) having a second refractive index; and

b)   a second, differently proportioned, plurality of grooves (6; 106; 228) at a second interface of the diffraction element with a third material (10; 110; 210) having a third, different, refractive index,

wherein the first and second pluralities of grooves are aligned with respect to each other such that a combined diffractive effect is achieved,

the method comprising applying said second material to said first plurality of grooves,

characterised in that the method comprises applying said third material (10; 110; 210) to said second plurality of grooves as a liquid.